



Advancing an Integrated Open-Source Water Accounting Platform in California

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Presentation Overview

- Share the vision the Water Accounting Platform
- Provide a project timeline
- Share venues for participation
- Give a demonstration of the platform
- Hear questions and comments

Vision

An accessible open-source water accounting platform that integrates data from a variety of sources and effectively communicates this information to support local, regional, and state water management decisions.

Why is this important, why now?

A common accounting platform could...

- Provide a consistent approach while reducing costs
- Be tailored to local conditions
- Support local understanding and decision-making
- Improve water management outcomes
- Promote intra and inter-basin coordination and regional analyses and review
- Serve as the basis for well-designed trading programs

Water Resilience Portfolio

3.6 Create flexibility for groundwater sustainability agencies to trade water within basins by **enabling and incentivizing transactional approaches**, including groundwater markets, with rules that safeguard natural resources, small- and medium-size farms, and water supply and quality for disadvantaged communities.

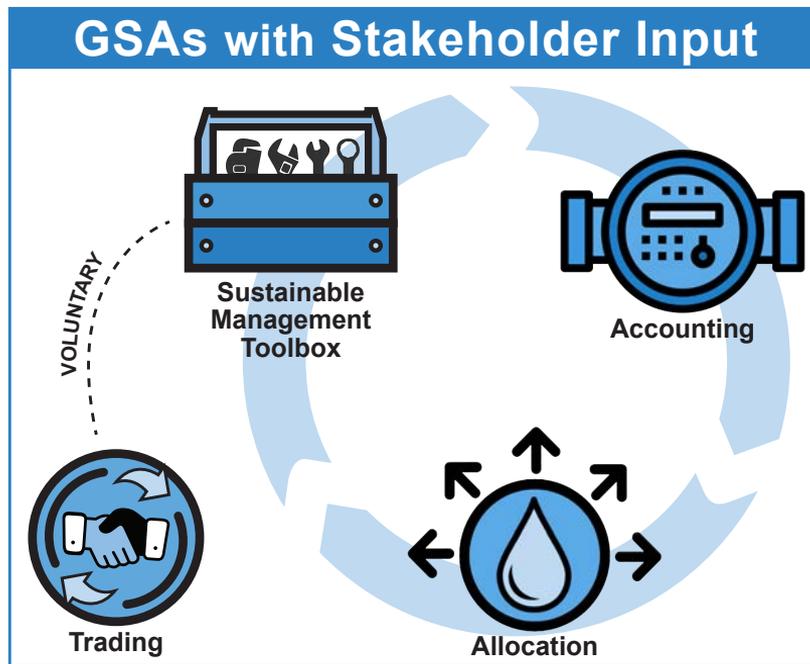
Water Resilience Portfolio

21.3 Develop **best practices** for inter- and intra-basin groundwater trading programs that protect communities, economies, and the environment, including **standards for measuring, reporting, accounting, and monitoring groundwater use and trading.**

California Water Commission

Supporting Well-Managed Groundwater Trading

Water Commission action:
Public discussions on needed safeguards for well-managed water trading programs in support of Water Resilience Portfolio Action 3.6



State Agency activity:

- SGMA Data Viewer
Supporting data for water budgets
- Water Budget Handbook
Guidance for consistent water budgets and data collection
- Collaboratively developing a freely available, open source groundwater accounting and budgeting platform
 - ✓ NGO administered
 - ✓ Voluntary use
 - ✓ Compatible with state reporting portals

Project Implementation

Phase 1



Expand
Platform
Accessibility &
Functionality

Year 1: 2021
to mid-2022

Project Implementation

Phase 1

Phase 2



Year 1: 2021
to mid-2022

Year 1 & 2: late
2021 & 2022

Project Implementation

Phase 1

Expand
Platform
Accessibility &
Functionality

Year 1: 2021
to mid-2022

Phase 2

Pilot Projects &
Scenario
Planning

Year 1 & 2: late
2021 & 2022

Phase 3

Support Water
Trading & Other
Local Management
Actions

Year 2 & 3: late
2022 & 2023

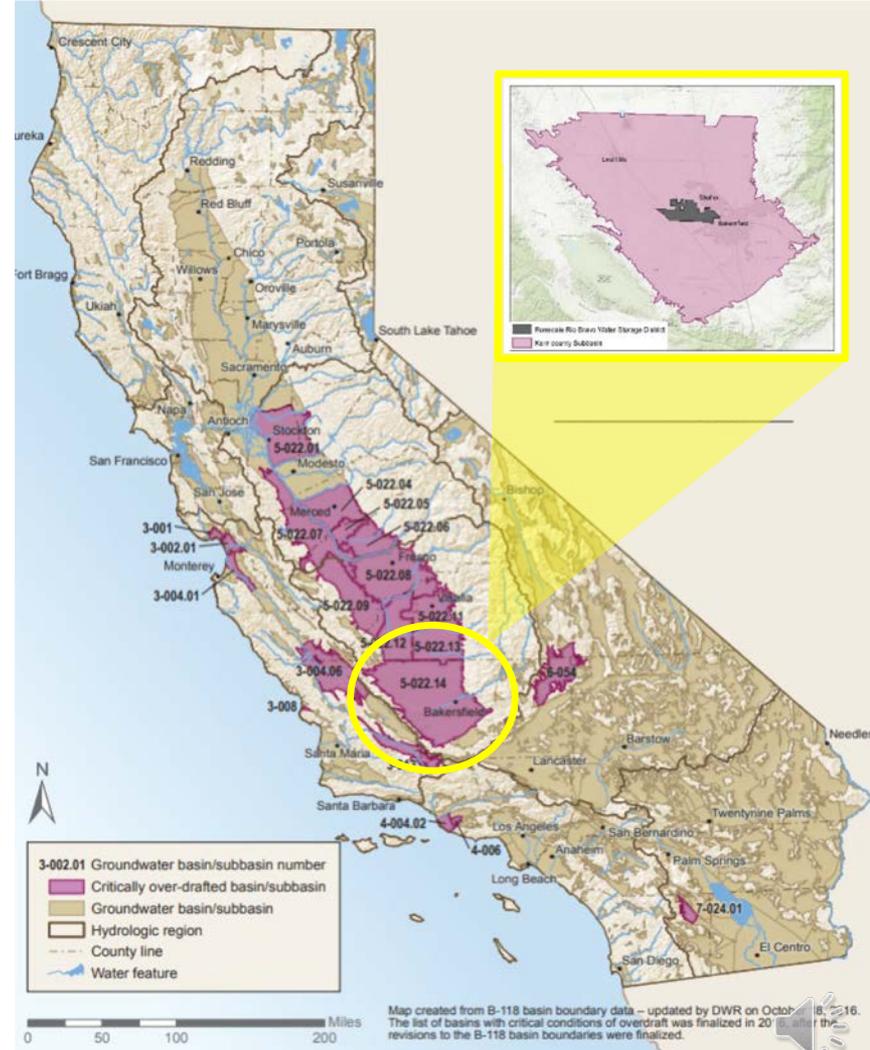
Stakeholder Engagement

- Public Meetings
- Quarterly Working Groups
 - Advisory
 - Technical
 - Platform Scaling
- Targeted Outreach

Platform Overview and Demonstration

Rosedale-Rio Bravo Water Storage District

- Kern County, west of Bakersfield
- Approximately 44,000 total acres
- Irrigated agriculture, industrial, and residential land uses
- Half of irrigated acreage planted in permanent crops
- Critically overdrafted designation





Rosedale-Rio Bravo Water Accounting Platform

Welcome to the [Rosedale-Rio Bravo Water Storage District Water Accounting Platform](#). The platform is designed to meet these objectives:

- Create a better understanding of water demand and supplies, for Landowners to effectively and efficiently make informed decisions regarding water supply and land use.
- Utilize a satellite based evapotranspiration model, called OpenET, to give landowners a past and present understanding of water demands on their specific parcels.
- Over the long term, develop the accounting platform into a trading platform, encouraging in-district water transfers.

Access Your Water Account

Sign In to view your Water Account. Create a User Profile if you don't have one yet.

Sign In

Create User Profile

Need help logging in?

[Forgot Password](#) | [Forgot Username](#) | [Request Support](#)

Platform Development

- Landowner-led Pilot Phase:
- Rosedale-Rio Bravo Water Storage District initiated Water Accounting and Trading Platform pilot project in 2018
- Implementation guided by landowner workshops and mock trading sessions





One Platform, Multiple Functions





One Platform, Multiple Functions





One Platform, Multiple Functions





One Platform, Multiple Functions





One Platform, Multiple Functions





One Platform, Multiple Functions





Water Accounting and Trading Platform

Welcome to the Environmental Defense Fund demonstration Water Accounting and Trading Platform. The platform is designed to meet these objectives:

- Facilitate effective accounting and management of available water resources, enabling water managers and landowners to make informed water supply and land use decisions.
- Advance well-designed water trading programs to help water agencies achieve groundwater sustainability goals and minimize economic costs to the community.
- Evaluate management actions to ensure community and environmental protections and identify opportunities to generate multiple benefits (i.e. benefits to water quality, habitat).

Access Your Water Account

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Create User Profile

Need help logging in?

Manager Dashboard

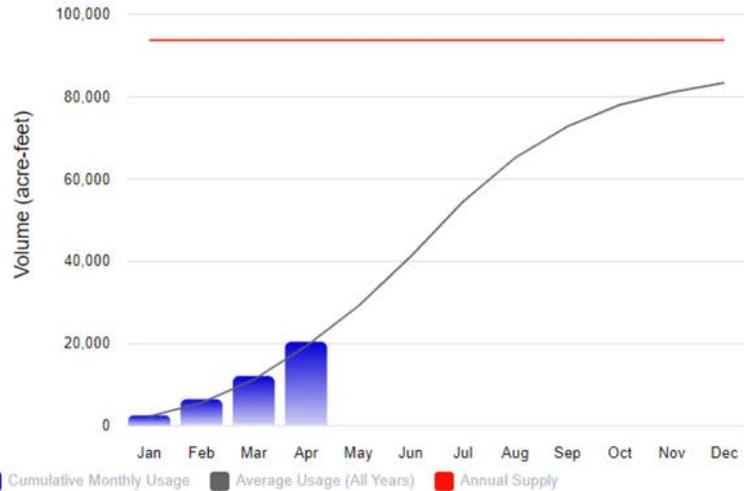
Set Water Allocation Viewing year 2021 ▾

District-Wide Statistics

ac-ft ac-ft/ac

Total Allocation	93,640.1 ac-ft
Project Water ⓘ	84,827.5 ac-ft
Reconciliation ⓘ	0.0 ac-ft
Native Yield ⓘ	4,241.4 ac-ft
Stored Water ⓘ	0.0 ac-ft
Precipitation ⓘ	4,571.3 ac-ft
<hr/>	
Total Usage	20,452.3 ac-ft
Average Annual Usage	83,405.4 ac-ft

2021 District Allocation and Usage ⓘ



Account Usage Report

[View All Accounts](#)

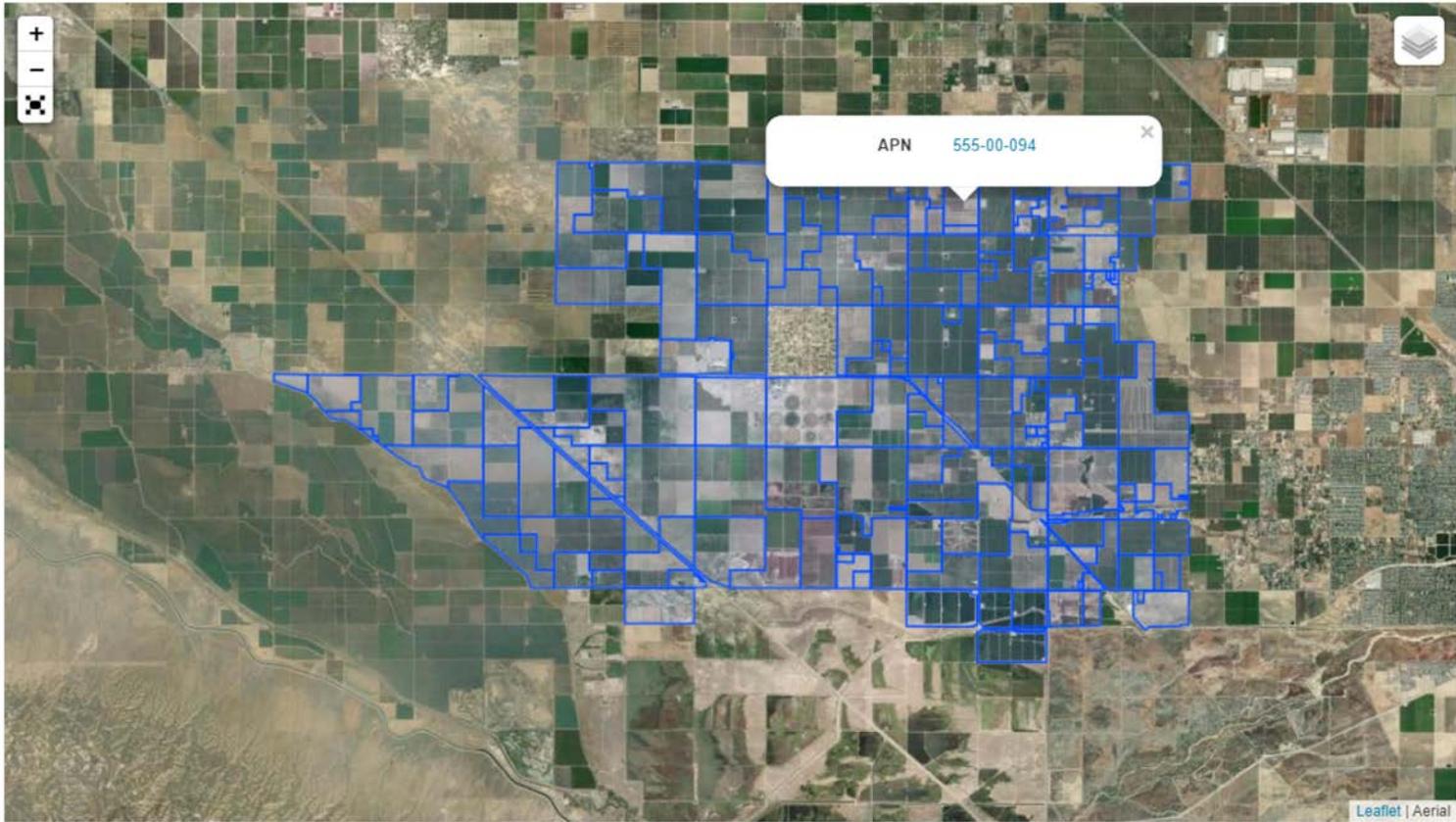

Account Name	Account Number	Total Allocation (ac-ft)	Project Water	Reconciliation	Native Yield	Stored Water	Precipitati
Farmgistics Industries	10707	1,378.3	1,248.6	0.0	62.4	0.0	67.3
Elecrop Farms	10708	390.6	353.8	0.0	17.7	0.0	19.1
Croppine Farms	10709	516.8	468.2	0.0	23.4	0.0	25.2
Farmcell Industries	10710	485.2	439.6	0.0	22.0	0.0	23.7
Chersoil Farms	10711	119.4	108.1	0.0	5.4	0.0	5.8
Hotfarm Industries	10714	599.6	543.2	0.0	27.2	0.0	29.3
Farmbean Industries	10715	536.8	486.3	0.0	24.3	0.0	26.2
Wheater Farms	10716	643.8	583.2	0.0	29.2	0.0	31.4

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Trade Activity


[Delete All Trade Activity](#)

Trade	Date	Status	Buyer Account	Seller Account	Quantity (ac-ft)	Unit Price	Total
2021-0010	4/1/2021, 3:24 PM	Awaiting Registration	#Agrowgrua Farms (10...	#Dairy Farms (10721)	100	\$250.00	
2021-0009	3/10/2021, 1:21 PM	Awaiting Registration	#Farmcell Industries (1...	#Crosscrop Farms (107...	170	\$415.00	
2021-0008	3/1/2021, 11:33 AM	Awaiting Registration	#Agrass Farms (10717)	#Cropejet Farms (10765)	200	\$250.00	
2021-0007	2/10/2021, 11:27 AM	Awaiting Registration	#Cropejet Farms (10765)	#Farmfruit Industries (...)	200	\$255.00	
2021-0006	2/9/2021, 10:53 AM	Awaiting Registration	#Croper Farms (10763)	#Wheater Farms (10716)	100	\$225.00	
2021-0005	2/9/2021, 10:53 AM	Rejected	#Croper Farms (10763)	#Cultive Farms (10842)	60	\$225.00	
2021-0004	2/8/2021, 10:20 AM	Countered	#Agrowgrua Farms (10...	#Farmdove Industries (...)	150	\$250.00	
2021-0003	2/8/2021, 8:50 AM	Awaiting Registration	#Crosscrop Farms (107...	#Chersoil Farms (10711)	50	\$500.00	



Landowner Dashboard

Wheater Farms (Account #10716)

Water Budget

Usage By Parcel

Account Map

Trading

Viewing year 2021

Water Budget Overview

ac-ft ac-ft/ac

+ Acres Managed 194.4 ac

Total acres of all your managed parcels

+ Allocation 643.8 ac-ft

Your annual allocated water budget

+ Purchased -

Water supply you have purchased this year

+ Sold 100.0 ac-ft

Water supply you have sold this year

Total Supply 543.8 ac-ft

Allocation + Purchased - Sold

Usage to Date 165.3 ac-ft

Total usage this year as measured by OpenET

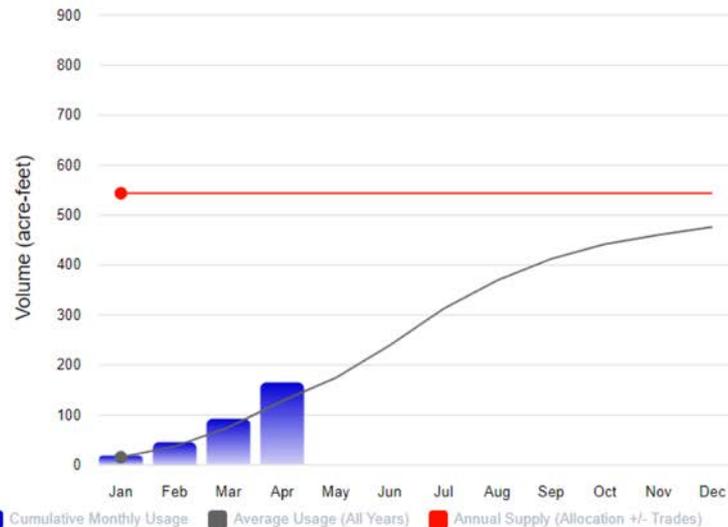
Current Available 378.6 ac-ft

Allocation + Purchased - Sold - Usage to Date

Average Annual Usage 476.4 ac-ft

Average annual usage from all years of OpenET data

2021 Allocation and Usage



Landowner Dashboard

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2021 Allocation and Usage

- Allocation 643.8 ac-ft

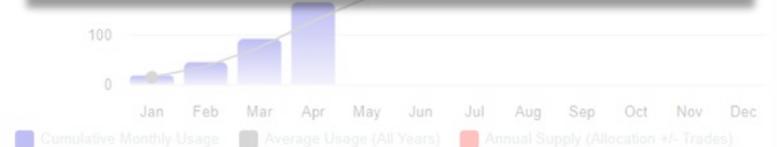
Project Water 583.2 ac-ft

Reconciliation 0.0 ac-ft

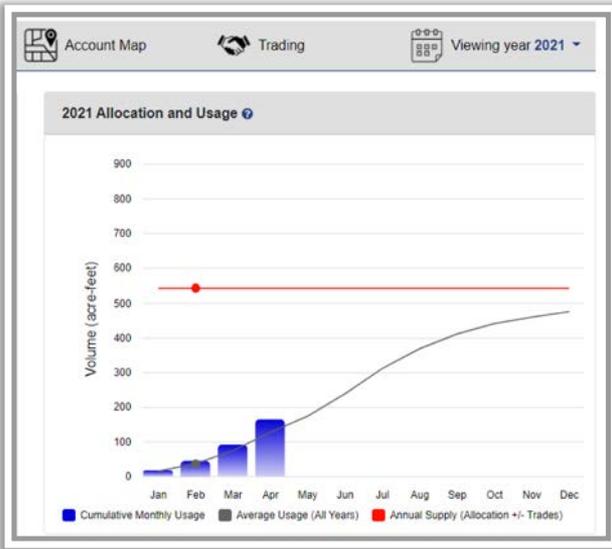
Native Yield 29.2 ac-ft

Stored Water 0.0 ac-ft

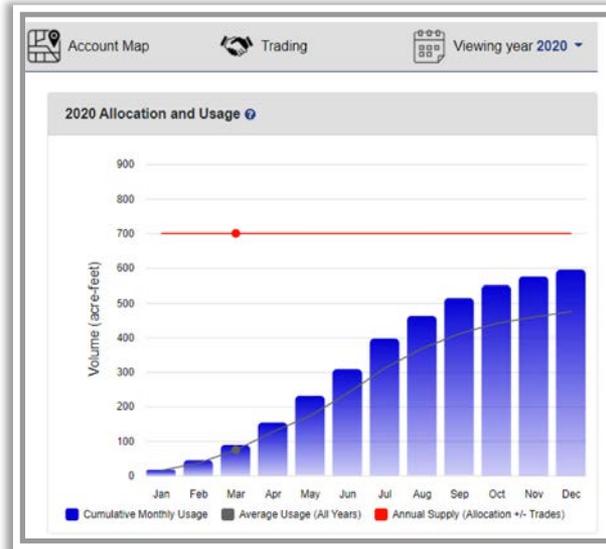
Precipitation 31.4 ac-ft



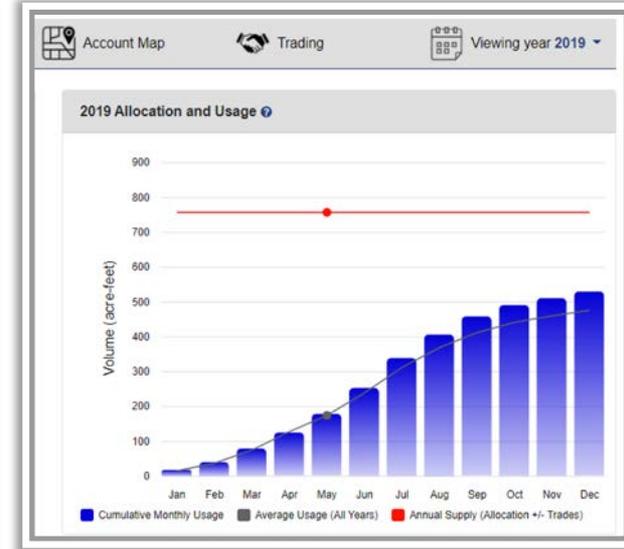
Water Allocation and Usage



2021



2020

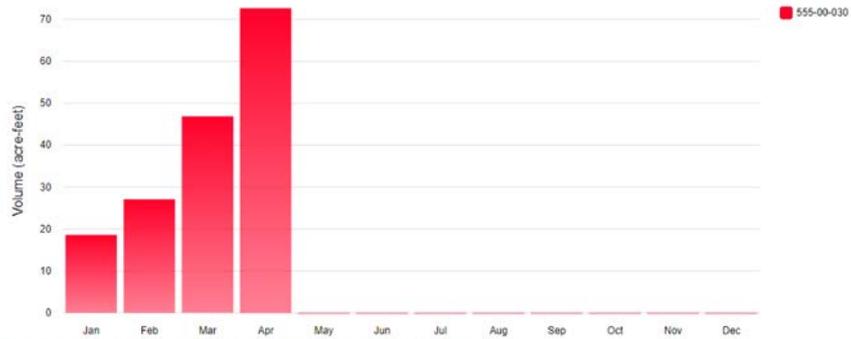


2019

Wheater Farms (Account #10716)

Water Budget Usage By Parcel Account Map Trading Viewing year 2021

2021 Water Usage by Parcel Visualization



Estimated water usage is based on satellite imagery and may not be accurate at the APN level. Details of water use measurements can be found in the OpenET FAQ.

2021 Water Usage by Parcel Tabular

Override OpenET Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
555-00-030	18.6	27.1	46.9	72.7	-	-	-	-	-	-	-	-	165.3
Total	18.6	27.1	46.9	72.7	0.0	165.3							



Account Map



Trading



Viewing year 2021



Water Trading



Water Accounting and
Trading Platform

[My Dashboards](#) ▾ [Manage](#) ▾ [Trade](#) ▾ [Scenarios](#) ▾ [Learn More](#) ▾

Buy and Sell Water / Posting: Offer to Buy 50 ac-ft

Posting: Offer to Buy 50 ac-ft

Details

Posting Date	2/26/21, 2:44 PM
Type	Offer to Buy
Status	Open
Initial Quantity	50 ac-ft
Available Quantity	50 ac-ft
Unit Price	\$350.00 per ac-ft
Total Price	\$17,500.00
Description	Need to complete transaction by March to plan for the summer season.

Respond to Offer

Select a Water Account to view your options to respond to this posting

Water Account

Select an Account ▾

[Continue](#)

Market Metrics

Current Trading Conditions

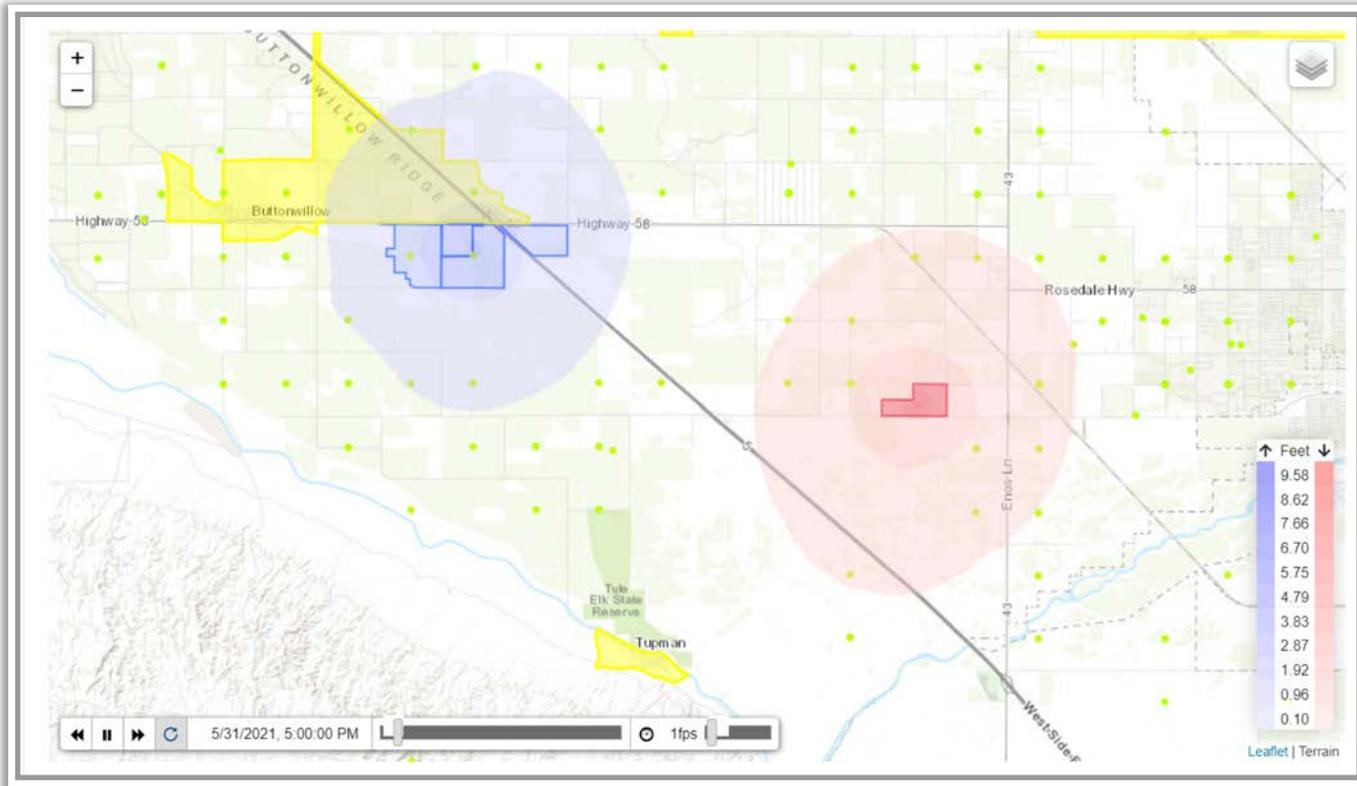
Current Ask Most recent Offer to Sell	100.0 ac-ft at \$250.00 per ac-ft	Total Ask Volume Total volume of all Offers to Sell	750.0 ac-ft
Current Bid Most recent Offer to Buy	170.0 ac-ft at \$415.00 per ac-ft	Total Bid Volume Total volume of all Offers to Buy	720.0 ac-ft
Last Trade	200.0 ac-ft at \$250.00 per ac-ft		

Historic Trading Conditions

Offer History



Understanding how a water trading program can affect groundwater levels



- Seller parcel
- Buyer parcel
- Disadvantaged community
- Domestic well

Platform Expansion

- Integration of additional data inputs
- Expansion of accounting functionality
- Co-development of common groundwater data standards
- Integration of open-source scenario planning and visualization features

Why should open-source matter to you?



**Open-source
Software
Approach**



**Options to
Leverage the
Platform**



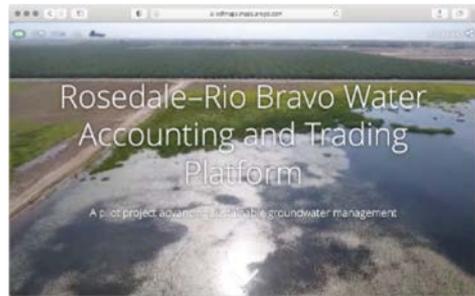
**Scaling and
Onboarding**

To learn more, please visit ...



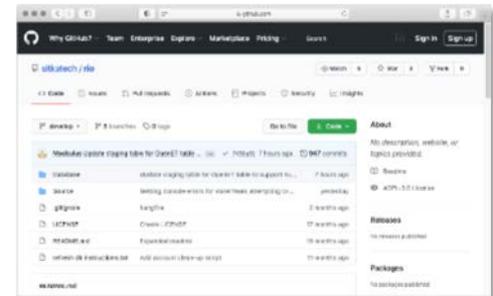
Demo Platform

waterplatform.edf.org



Story Map

edf.org/waterplatformstory



Source Code

github.com/sitkatech/rio

Thank you!

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